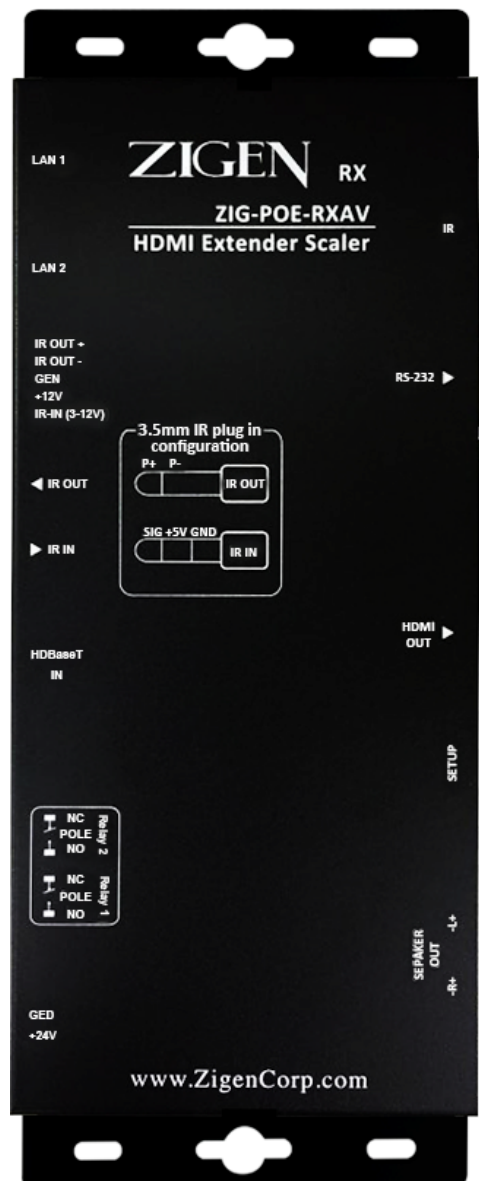




Zigen HDBaseT Receiver (330 ft.), POE, 4K UHD Scaler, 20W per channel Amplifier, Ethernet ports, Relays, IR and RS-232

ZIG-POE-RXAV



USER MANUAL Ver. 1.0

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Before You Begin

Follow all instructions marked on the device during using.
Do not attempt to maintain the device by yourself, any faults, please contact your vendor.

- Provide proper ventilation and air circulation and do not use near water.
- It is better to keep it in a dry environment.
- The system should be installed indoor only.
- Only use the power cord supplied with the device.
- Do not use liquid or aerosol cleaners to clean the device.
- Always unplug the power to the device before cleaning.
- Unplug the power cord during lightning or after a prolonged period of non-use to avoid damage to the equipment.



Introduction

HDBaseT 328'/100M Receiver (RX) perfect for classrooms, boardrooms, huddle rooms and more – POE, 4K UHD and 4K UHD scaler, built-in amplifier that strips from HDMI, 2 Ethernet ports, 2 relays, WebOS. Also includes IR and RS232.

Package Contents

- 1 x ZIG-POE-RXAV
- 1 x 24V/2.5A DC Power Supply
- IEC USA AC Cord 3'
- 5 x Male Captive Screw Connectors (2 pin: power, 3 pin: Relays x 2 (NC-G-NO), 4 pin: speakers, 5 pin: IR)
- Remote Control
- 1 x User Manual

Features

- 48V IEEE POE
- WebOS Control
- 2 Ethernet LAN ports
- Built-in Class-D Amp 20 watts per channel stereo
- Built-in 4K UHD Scaler
- Supports HDMI 1.2, 1.3 and 1.4 with 48-bit deep color
- Supports digital video formats up to 4K UHD (2160P60 @4:2:0 pixel format)
- Supports uncompressed PCM 2- Ch., 5.1, 7.1, Dolby Digital, DTS, Dolby TrueHD, DTS HD-Master Audio and more.
- Bi-directional IR 3V to 12V
- Bi-directional RS-232
- 2 Relays for Contact Closure
- RS-232 Command Set for 3rd Party control



Specifications

Ports

Inputs

HDBaseT – RJ-45

Outputs

HDMI x 1

L/R Audio (stereo) – via 4 pin female locking connector (Phoenix), 20W per channel Class D

Control/Access

IR in/out – 3.5mm stereo

IR in/out – female locking connector (Phoenix)

Power – female 2-pin locking connector - 24V (internal step up transformer to get 48V IEEE POE source)

2 Ethernet 10/100 BaseT – RJ-45

2 Relay/Contact Closures – 2-pin locking connectors (Phoenix)

Distance between TX and RX

Full HDBaseT - 328' or 100M @ 2160P60 4:2:0 8-bit

Copy Protection Compliance

HDCP – Yes – 1.4 (includes functionality to overcome the problem when displays don't implement clock stretching)

Video Bandwidth

10.2 Gbps

Video Timings

480i, 480p, 720p, 1080i, 1080p, 1920x1200, 2K and 4K. 4K/2K, 30Hz 24bpp.
4K/2K, 60Hz, 24bpp with 4:2:0 pixel format

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Audio

Stereo, 20W per channel RMS, Class D Amplifier

4K UHD Scaler

Scales 1080P24/30 (generally a movie) incoming signal up to 2160P24/30

Wall Mountable

Yes

Power Consumption

Depends on POE requirements. Without POE ~ 5W. With POE > 5W up to around 13W -> ~18W

Dimensions

5.9 x 2.9 x .95 inches
150 x 74 x 24 millimeters

Weight

.67 pounds
303 grams

Certifications/Compliance

FCC, HDBaseT, CE, RoHS, HDCP, HDMI

Works With

Any properly implemented HDBaseT transmitter. Works especially well with Zigen ZIG-PS-61 presentation switch and ZIG-POEWP-100 wall plate transmitter.



Right Side Panel. See items 1-6 on
next few pages



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Panel Description

Right Side Panel

1. Speaker connection – 4 pin female locking connector. Connect directly to speaker wires and then to speakers. Output is 20 watts per channel – plenty of sound for classroom, bedroom, conference room or huddle room.

2. Dip Switch –

Dip Switch Settings:

Default/Factory – **All Up or OFF**

Up = Off

Down = On

DIP 1: EDID

OFF: **EDID default mode (use EDID from connected TV)**

ON: Custom EDID - not implemented yet. Once implemented will override switches 2 and 3.

DIP2: Force 3D Off

OFF: **EDID copied from HDMI output**

ON: EDID copied but force output to NO 3D

DIP3: Force 2 Channel Audio

OFF: **EDID copied normal with multichannel audio**

ON: EDID forced 2 channel stereo

DIP4: Audio Routing

OFF: **Speaker output (amp turned on)**

ON: HDMI output to TV (amp turned off)

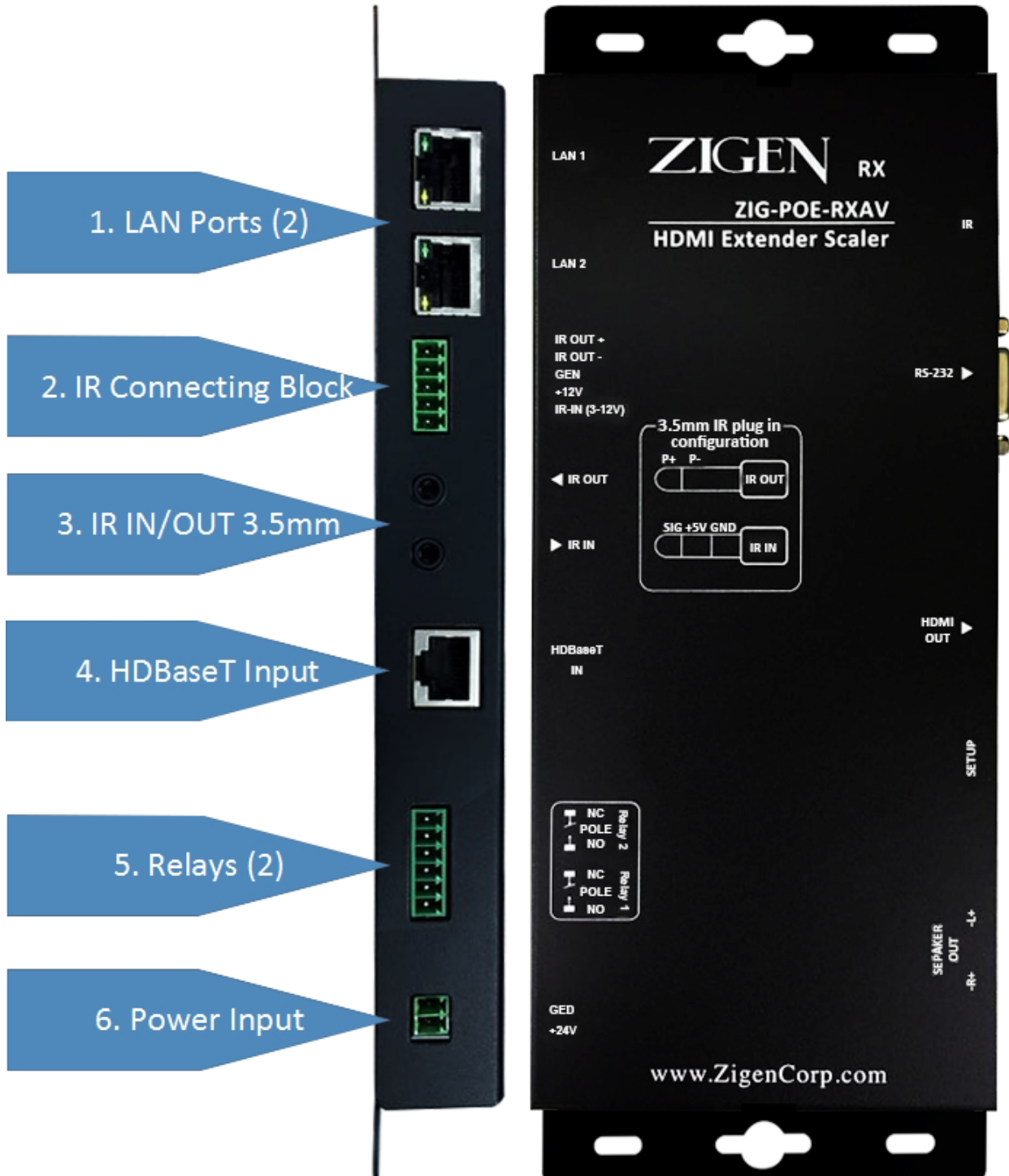
3. HDMI Output – Connect HDMI cable here for output to the display or projector.
4. RS-232 – Connect to standard 9 pin serial port and on to your projector, TV, 3rd party controller, etc for RS-232 device control



5. IR Receiver – built in IR receiver sensor – if possible place in line of site to remote control. You can also use 3.5mm or locking connections for IR receiver
6. Status Indicator Lights:
 - a. Power – Solid green – indicated power is present
 - b. Mode – Should be flashing green – data is flowing
 - c. Link – Should be solid when TX and RX are connected
 - d. HDCP – Solid Green – when HDCP is detected/present



Left Side Panel. See items 1-6 on
next few pages





Left Side Panel

1. 2 LAN Connections/Full Duplex Ethernet ports. 10/100 BaseT. Use for programming the ZIG-POE-RXAV and ZIG-POEWP-100 or for 3rd party controller, or connection to your ISP or router.
2. IR connection terminal – 5-pin locking (Phoenix style) connector.
 - a. IR OUT +
 - b. IR OUT –
 - c. Ground
 - d. + 12V
 - e. IR IN 3-12V
3. IR connection via 3.5mm
 - a. IR OUT – Use mono plug tip & ring (P+ and P-)
 - b. IR IN – Use stereo plug tip, ring & sleeve (Signal, 5V & Ground)

Note: Includes dual voltage IR that installers can use to power up any 3rd party IR receiver such as Xantec, KX|AV or Niles. Traditional extenders support 5V **OR** 12V IR signals. Zigen extenders support from 3V up to 12v. This is a great feature when using it with 3rd party controllers that output different voltages (ex. Control4 uses 3V).

Connect IR inputs to receive remote control signals for routing back to the transmitter via HDBaseT and then on to the source device you want to control. Connect IR outputs to your display or projector to control is from a source on transmitter.

4. HDBaseT Input – plug HDBaseT (RJ45) input signal from HDBaseT transmitter. Maximum cable length is 100 meters (328')
5. Relays – 2 3-pin phoenix style connectors (captive screw) – NC (normally closed), G (ground) and NO (normally open. Use to insert in circuit of device you want to trigger – examples include masking screens, screen control, lighting features, etc.
6. Power connector – 2-pin phoenix style (captive screw) – connect to 24VDC power block supplied with the unit.

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Captive Screw Connectors – pin outs are also located on the top of the unit



2-pin connector – for power

- Power – connect black wire to negative terminal (-)
- Power – connect white wire to positive terminal (+)



3-pin connector – for relays

- Relays – there are settings for both NO and NC for each relay – control via WebOS or 3rd party controller.

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4-pin connector – for connecting to speakers

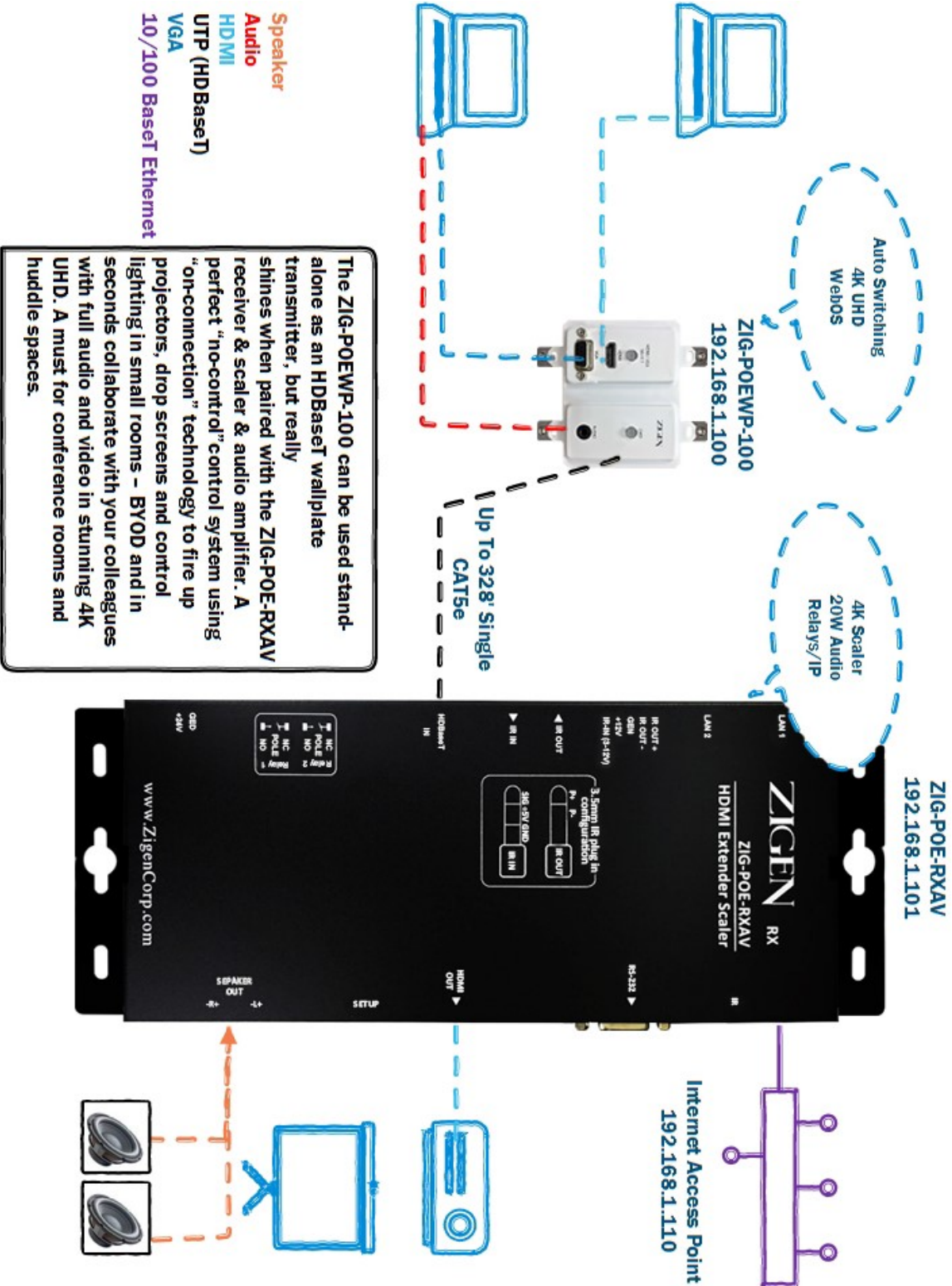
- Right Speaker +
- Right Speaker –
- Left Speaker +
- Right Speaker –
- 14 gauge and higher speaker wire
- pin outs are labeled on unit.



5-Pin connector – for IR connecting block

- IR OUT +
- IR OUT –
- Ground
- + 12V
- IR IN 3-12V

Note: connections also labeled on top of unit. Consult you IR device manufacturer for proper connections.



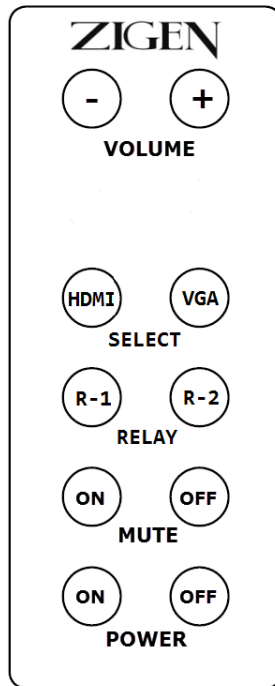


General – In the example above we are showing using an HDBaseT transmitter (ZIG-POEWP-100) connected to the HDBaseT receiver (ZIG-POE-RXAV) – as mentioned previously you also get an amplified audio output for direct connection to speakers, LAN ports for almost anything you choose and for controlling/setting up the devices, relays, a 4K scaler and IR and RS232 control and functionality.

1. Connect sources to POEWP – HDMI and VGA w/Audio
2. Connect RXAV to Display via HDMI
3. Connect Ethernet cable between HDBaseT transmitter (ZIG-POEWP-100) and RXAV (HDBaseT) Ports – this will also provide power on the ZIG-POEWP-100
4. Connect LAN switch/router to LAN 1 port – this is the switch or router that issues IP address (DHCP server)
5. Connect your PC or MAC to the same switch/router. The DHCP server will issue IP addresses to both devices separately.
6. Turn on the Source, TV and RXAV
7. Locate the serial number sticker on each RXAV and make note of it. The web address for the given unit is <http://rxav-xxxx/> where the xxxx are the last 4 digits of the serial number. Ex. If the serial number is 154320000015, then the web address is <http://rxav-0015/>. This is necessary to distinguish multiple units from colliding in the network before their names are changed by the customer. The ZIG-POEWP-100 operates similarly...i.e. <http://poewp-xxxx/>.
8. You can also locate the devices with Bonjour. If you do need to connect directly from a PC or Mac to the LAN 1 or 2 port in the RXAV without a router (LAN) you can expect up to 5 minutes for the address to be resolved.
9. Once connected the user interfaces will be available for you to evaluate, change, enter commands, etc.



ZIG-RXAV-POE Remote Control



Perfect for classrooms when connected to the ZIG-POEWP-100 use the remote to change between HDMI and VGA sources.

- Trigger devices connected to relays
- Mute the audio
- Power down the RXAV
- Control the Volume



WebOS Interface Page

ZIG-POE-RXAV

ZIGEN ZIG-POE-RXAV Control Panel

Local HDBaseT Remote HDBaseT
LINK: LINK:
HDMI: HDMI:
Mode: Mode:
Cable Length: 31 Cable Length: 32

Refresh

Device Name:rxav

Notes installer notes for rxav

Save Notes

Control

Relays

- ☐ Relay1
☐ Relay2

Audio

☐ Mute

Volume -10

Bass 5

Treble

RS232 Baud Rate 57600

Serial:143340000000

Firmware:0.98a

Hardware:0001

IP Address:172.31.31.76

Hostname rxav

Erase Storage

Choose Files no files selected

Upload Firmware

Reset POEWP

Install Update

Status

Control/Defaults

Device
Name/Notes

Firmware/Reset
/ Info

WebOS

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Status

Local HDBaseT (RXAV in this case)

- Link – Green when there is an HDBaseT connection
- HDMI - Green when HDMI is present
- Mode: Solid green when HDCP is present, flashing green when no HDCP detected.
- Cable Length of CAT cable being reported by HDBaseT chip – this is not always 100% accurate, especially with shorter cables.

Remote HDBaseT (POEWP in this case)

- Link – Green when there is an HDBaseT connection
- HDMI - Green when HDMI is present
- Mode: Solid green when HDCP is present, flashing green when no HDCP detected.
- Cable Length of CAT cable being reported by HDBaseT chip – this is not always 100% accurate, especially with shorter cables.

Device Name & Notes

- Device Name – default out of the box is ZIG-POE-RXAV.XXXX (last 4 digits of the serial number). You should change it if you are using more than 1 device (Change Name below) to whatever you want – ex. CR100RX – for conference room number 100 receiver.
- Notes – free form field for entering installer notes.

Control/Defaults

- Relay 1 – checking box changes the state of the relay. NC-G-NO
- Relay 2 – checking box changes the state of the relay. NC-G-NO
- Audio Mute – Mutes the audio from the built-in amplifier.
- Volume Control – Control volume
- Bass – Control the bass of the audio
- Treble – Control the treble of the audio
- RS232 Baud Rate – use to match the speed of your 3rd party control system.

Firmware/Reset/Info



- Serial Number – serial number of RXAV
- Firmware – Current firmware revision
- Hardware – for internal use
- IP Address – IP address of the unit assigned by your DHCP Server
- Hostname – this is what you want to call the unit – syntax example CR100RX_k123. This is also the name you type into your browser to access the WebOS.
- Erase Storage – will erase user entered data like installer notes.
- Choose File/Upload Firmware – when necessary, this is where you select a new firmware file and upload firmware.
- Reset POEWP – will reset the ZIG-POEWP-100 remotely.
- Install Update – when necessary is for installing new software updates to the unit.

RS-232 Commands

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Command Structure:

ZIG-POE-RXAV RS232 commands

<@hostname> <sp> <command> <sp> <parameter> <end of command>

<@hostname> indicates the specific target RXAV device, preceded by @ <sp> whitespace, space or tab <command> defines the current operation <parameter> is the variable or the value passed to the device

<end of command> newline char \n, ASCII 0xA [hex]

Response Structure:

<@hostname> <sp> <parameter> <sp>... <parameter> <sp> <end of response>

<@hostname> = indicates the device initiating the response <sp> = space, ASCII 0x20 <parameter> = command-specific number of parameters, each followed by a space 0x20 [hex] <end of response> = newline char \n, ASCII 0xA [hex]

RS232 Protocol Settings:

Baud Rate = 115200 Data Bits = 8 Parity = None Stop Bit = 1

Flow control = None

ZIG-POE-RXAV COMMANDS:

Set volume [range -136dB to +10dB, 1dB steps]

@rxav-01 vol -25

Set device 'rxav-01' volume to -25dB Response: @rxav-01 vol x

Increase volume

@rxav-01 volup

Increase device 'rxav-01' volume by 1dB Response: @rxav-01 vol x

Decrease volume



@rxav-01 voldn

Decrease device 'rxav-01' volume by 1dB Response: @rxav-01 vol x

Bass level [range -10dB to +10dB in 2dB steps]

@rxav-01 bass 6

Set device 'rxav-01' bass level to +6dB Response: @rxav-01 bass x

Treble level [range -10dB to +10dB in 2dB steps]

@rxav-01 treb -2

Set device 'rxav-01' treb level to -2dB Response: @rxav-01 treb x

Mute on/off

@rxav-01 mute on

Set device 'rxav-01' mute on Response: @rxav-01 mute x

Relay 1 on/off

@rxav-01 rel1 on

Set device 'rxav-01' relay 1 to ON position Response: @rxav-01 rel1 x

Relay 2 on/off

@rxav-01 rel2 on

Set device 'rxav-01' relay 2 to ON position Response: @rxav-01 rel2 x

Get Device Status

@rxav-01 st

Get device 'rxav-01' status Response: @rxav-01 st power x, vol x, bass x, treb x, mute x, relay1 x, relay2 x

Display Device Info

@rxav-01 man

Get device 'rxav-01' device information Response: @rxav-01 Zigen Corp, ZIG-POE-RXAV, fw1 ver xx, fw2 ver yy

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Power on/off

@rxav-01 pwr off

Set device 'rxav-01' power off Response: @rxav-01 pwr x

Warranty Information



LIMITED WARRANTY – with the exceptions noted in the next paragraph, ZIGEN warrants the original purchaser that the equipment it manufactures or sells will be free from defects in materials and workmanship for a period of three years from the date of purchase. The proof of sale is required in order to claim warranty. Should this product, in ZIGEN's opinion, prove defective within this warranty period, ZIGEN, at its option, will repair or replace this product without charge. Customers outside of US are responsible for shipping charges to and from ZIGEN. Any defective parts replaced become the property of ZIGEN. This warranty does not apply to those products which have been damaged due to accident, unauthorized alterations, improper repair, modifications, inadequate maintenance and care, or use in any manner for which the product was not originally intended for. Items integrated into ZIGEN products that are made by other manufacturers, notably computer hard drives and liquid crystal display panels, are limited to the term of the warranty offered by the respective manufacturers. Such specific warranties are available upon request to ZIGEN.

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